

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventors D. Hanks et al.
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Examiner Christopher Lamb
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Title: Sensing Media Speed

REPLY BRIEF

Construing An Absolute Reference For Radial Positioning

The Examiner asserts that an absolute reference for radial positioning in Claims 13 and 39 and an absolute radial location as a reference for radial positioning in Claim 51, construed according to the definition of "absolute" in the American Heritage College dictionary, is met by the closed loop control system of Black (in which the actual location of the transducer head is determined directly from the reference pattern). Answer page 15. This assertion is not correct.

The words of a claim are generally given the ordinary and customary meaning that the words would have to a person of ordinary skill in the art at the time the application was filed. *Phillips v. AWH Corporation*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). "The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *Id.* The intrinsic evidence is consulted first in determining the meaning of a disputed claim term -- the claims themselves, the specification and the prosecution history. *Id.* at pp. 1314-1317. While a dictionaries and other extrinsic evidence may be used, they are less significant than the intrinsic record in determining the meaning of a claim term. *Id.* at p. 1317.

Claim 13 recites a controller "configured to ... establish an absolute reference for radial positioning on the untracked non-data side of the disk." Claim 39 recites

"establishing ... an absolute reference for radial positioning on the untracked non-data side of the disk." Claim 51 recites "establishing an absolute radial location as a reference for radial positioning on the non-data side of the disk." Claims 13, 39 and 51 all relate to controlling the rotational speed on an optical disk. The characteristics of open loop and closed loop control systems were well known at the time the application was filed. The use of an absolute radial reference is characteristic of an open loop control system in which there is no direct connection between the output of the system (moving the transducer a predetermined distance from the reference position to the desired position) and the actual conditions encountered (detecting the actual position of the transducer over the disk). A person having ordinary skill in the art of control systems generally, and more particularly control systems for reading and writing optical disks, would understand from the language in the claims alone that "an absolute reference for radial positioning" in Claims 13 and 39 and "an absolute radial location as a reference for radial positioning" in Claim 51 refers to a fixed point or location to which all radial positioning may be referenced.

The specification, as further intrinsic evidence, also supports this definition. The "absolute" limitation recited in Claims 13, 39 and 51 is enabled by U.S. patent Application serial no. 10/347,074, publication no. 20040141445, which was incorporated by reference into the present Application at paragraph 0015 of the Specification. The '074 Application states that: "The absolute radial location serves as a reference track that all radial positioning can be referenced to" (paragraph 0017); and "The absolute/reference radial position is a radial location within the reference pattern 300 that can be used as a reference track to which all radial positioning can be referenced." (paragraph 0032).

Black does not teach any such absolute reference or absolute radial location. On the contrary, as detailed in the Appeal Brief, Black teaches a closed loop control system in which the actual radial position of the transducer is determined directly from the reference pattern and away from an open loop control system in which the position of the transducer is determined indirectly based on an absolute reference.

Open v. Closed Loop Position Control

There is no dispute that using an absolute radial location as a reference for positioning is characteristic of open loop control. Indeed, determining the actual position of a transducer directly from a reference pattern, as in Black, is a principle distinguishing feature of closed loop control compared to open loop control. Black teaches away from open loop control. Thus, Black teaches away from an absolute radial location as a reference for positioning which is characteristic of open loop control.

Absolute Reference Outside A Label Area for Radial Positioning Inside The Label Area

The Examiner asserts at page 16 of the Answer that Honda in view of Black teaches using a reference pattern outside a label area for radial positioning inside the label area, as follows:

Nonetheless, Honda in view of Black discloses a pattern outside the label area used to establish a position inside the label area. This comes from the teaching of Black that the "data area" (which is the label area of Honda) and the pattern area may be separate areas on the disc (Black column 4, lines 1-20). Since Black uses a separate transducer to read the pattern from the one used to read/write information (in Honda, the one used to print the label), it's possible to have these patterns on separate areas of the disc and yet still use the pattern to establish a position inside the label area.

The total of the disclosure in Black in this regard is the following statement -- "the principles of the invention are also directly applicable to systems in which the reference pattern and data storage areas are separate." Black column 4, lines 12-15. Black discloses a one sided disk on which data is stored and read magnetically and a reference pattern is read optically. E.g., Black column 4, lines 15-21. Black does not explain how the unspecified "principles" might apply to a disk having separate magnetic data storage and optical position reference areas. The only reference pattern shown or described in Black extends across nearly the entire disk. Black Fig. 1. This is necessarily so, it would seem, if Black is to utilize the bulk of the area of the disk for data storage. Furthermore, the claimed subject matter, by contrast, utilizes a two sided disk having a "tracked data side on which data may be stored and an untracked non-data side that includes a pattern of reflective and non-reflective regions aligned

circularly about a rim of the disk outside a label area in which images may be formed on the non-data side of the disk." E.g., Claim 13. LightScribe® and other such optical labeling techniques likely had not even been conceived in the Black era (circa 1964). Thus, the suggestive power of Black's unsupported one-liner is substantially diluted by the absence of specificity, absence of support for the assertion, and the context in which the statement is made vis a vis the labeling technology reflected in Honda and in the claimed subject matter.

In summary, so far as might be deemed relevant to the claimed subject matter, Black stands for the unremarkable proposition that it was known in the art to use an optical reference pattern for closed loop position control with rotating magnetic data storage media. Applicants respectfully submit that this proposition, in combination with the general labeling techniques disclosed in Honda, does not render obvious (1) establishing an absolute reference for radial positioning (characteristic of open loop control) using a pattern (2) outside the label area (3) on the non-data side of the disk, (4) for radial positioning over the label area.

Respectfully submitted,

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